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EXAMINER	
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ART UNIT	PAPER NUMBER
2195	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/784,944	SUN ET AL.	
	Examiner	Art Unit	
	CAROLINE ARCOS	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6 and 8-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6,and 8-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-4, 6, and 8-14 are pending for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-4, 6, and 8-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The following terms lack antecedent basis:

i. The process- claim 9.

b. The claim language in the following claims is not clearly understood:

i. As per claim 1, lines 10-14, it is unclear how changing a priority of the task (operating system) higher than a primary priority of the task (operating system) is done (i.e. is changing the priority of the operating system in reference to another operating system or in reference to itself by changing of the priority of tasks executing under the control of the operating system? is there a single or multiple operating systems executing?) It is unclear what is the relation between the task and the operating system (i.e. are they the same or is the task running under the control of the operating system?).

ii. As per claim 3, lines 2-4, it is unclear how the changing of the operating system priority to a lower priority is done. (i.e. is it changing the operating system priority is reference/compared to another operating system?) It is unclear what is the relation between the task and the operating system (i.e. are they the same or is the task running under the control of the operating system?).

iii. As per claim 4, line 4, it is uncertain whether "determining whether a non idle process is executable under the control of the operating system" is done for the second time. Line 8, it is not clearly understood that is the relation between the interruption request flag and the non-idle process. It is not clearly understood what are the criteria and when the interruption to the operating system is required.

iv. As per claim 9, lines 14-18, it is unclear whether changing the priority of the operating system in reference to another operating system or in reference to itself by changing of the priority of tasks executing under the control of the operating system? is there a single or multiple operating systems executing?) It is unclear what is the relation between the task and the operating system (i.e. are they the same or is the task running under the control of the operating system?).

v. As per claim 10, it has the same deficiency as claim 9.

vi. As per claim 12, it is unclear whether raising the priority of the operating system in reference to another operating system or in reference to itself by changing of the priority of tasks executing under the control of the operating system? is there a single or multiple operating systems executing?)

vii. As per claim 13, it is unclear whether changing the priority of the operating system in reference to another operating system or in reference to itself by changing of the priority of tasks executing under the control of the operating system? is there a single or multiple operating systems executing?).

viii. As per claim 14, lines 3-4, it is unclear to whom "a primary priority belong to?(i.e. to the operating system). It is unclear what is the relation between the task and the operating system (i.e. are they the same such that the operating system is the task or is the task running under the control of the operating system). Lines 5-7, it is unclear whether " a priority that is read " is the same as " reading a priority higher" referred to in line 3 (i.e. if it is the same priority, it should be referred to as" the priority read") it is unclear whether " a storage unit" and " a system parameter" is the same as a storage unit" and " a system parameter" referred to in lines 3-4 (i.e. of it is the same "storage unit" and " system parameter", they should be referred to as "said storage unit" and " said system parameter"). Line 6, it is unclear whether " a primary priority" is the same as " primary priority" referred to in line 3 (i.e. if it is the same primary priority, it should be referred to as " said primary priority"). Lines 6-7, it is unclear what is meant by "and an included non-idle process). Examiner interprets the limitation as"a non-idle process is executed".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Saito et al. (US 2005/0149933 A1).

5. As per claim 12, Saito teaches the invention as claimed including a task control method for causing a computer to execute an operating system as a task, the method comprising;

raising a priority of the task by reading a higher priority than a primary priority stored in a storage unit as a system parameter and setting the priority of the task to the higher priority upon determining processes to be executed under control of the operating system include a non-idle process to be executed under control of the operating system other than an idle process executed when the operating system proceeds to an idle state and based on an identifier stored in a control block executed by the operating system (Abs.; par. [0020]; par. [0086]; par. [0091]; par. [0093]; par. [0094]; par. [0096]; lines 11-18).

6. As per claim 13, Saito teaches a method performed by a processor causing a computer to execute an operating system as a task comprising:

Changing a priority of the task to a priority higher than a primary priority to execute the

operating system under control of which the non-idle process is executed upon determining that processes to be executed include a non-idle process (abs.; par. [0020]; par. [0086]; par. [0091]; par. [0093]; par. [0094]; par. [0096]; lines 11-18).

7. As per claim 14, Saito teaches a method performed by a processor causing a computer to execute an operating system as a task comprising:

reading a priority higher than a primary priority from a storage unit as a system parameter; and setting a priority of a task to a priority that is read from a storage unit as a system parameter that is higher than a primary priority to execute the operating system and an included non-idle process(abs.; Fig. 5, 110,112,113,114; par. [0020]; par. [0071]; par. [0086]; par. [0091]; par. [0093]; par. [0094]; par. [0096]; lines 11-18).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-4, 6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (US 2005/0149933 A1).

9. As per claim 1, Saito teaches the invention substantially as claimed including a computer-readable recording medium that stores a task control computer program including computer

executable instructions which when executed by a computer, cause the computer to execute an operating system as a task by performing:

determining whether a non-idle process is included in processes to be executed under control of the operating system that process is included in processes to be executed under control of the operating system based on a process identifier stored in a process control block (PCB) of processes to be executed under control of the operating system, wherein the non-idle process is a process waiting for execution under control of the operating system, other than an idle process executed when the operating system proceeds to an idle state (par. [0070]; par. [0071]; par. [0094]; par. [0095]; par. [0096]; par. [0098]; Fig. 5, 110,112,113,114);

changing a priority of the task to a higher priority higher than a primary priority of the task, to execute the operating system under control of which the non-idle process is executed by reading the higher priority stored in a storage unit as a system parameter and setting the priority of the task to the higher priority when it is determined at the determining that the executable processes to be executed under control of the operating system include the non-idle process (abs.; par. [0020]; par. [0086]; par. [0091]; par. [0093]; par. [0094]; par. [0096]; lines 11-18).

10. Saito does not explicitly teach that the process identifier indicates whether a process is the non-idle process or not. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to conclude from Saito teaching, of checking for executable task (non-idle process) in the executable task queue to be executed, that task ids existence in the executable task queue (fig. 5, 160" c, d, f"; par. [0086]- par. [0095]) indicated whether the process is non- idle process or not as claimed. In other words, if the process ID

exists in the queue, it is a non idle process since it is in the executable task queue.

11. As per claim 2, Saito teaches a system call that executes the determining and the changing (Fig. 7, 184; par. [0089]; par. [0141], lines 1-6).

12. As per claim 3, Saito teaches changing the priority of the task to the primary lower than the higher priority by reading the primary priority stored in the storage unit as a system parameter and setting the priority of the task to the primary priority after the operating system has been executed at the higher priority (par. [0020]; par. [0061]; par. [0085]- Par. [0095]; par. [0111]; par. [0112]; par. [0113]; par. [0115], lines 5-8; wherein after the higher task execute, it is implied that the scheduler will schedule the preempted task with the primary priority which is next on the queue list since the queue is ordered in descending order of priority).

13. Saito doesn't not explicitly teach the operating system has been executed at the higher priority for a predetermined period of time. However, it would have been obvious from Saito background of invention of allocating time slice for each virtual machine to incorporate this teaching with changing operating system priority to have a fair share of the CPU time (par. [0003]).

14. As per claim 4, Saito teaches the determining comprises:

Determining whether a non-idle process is executable under the control of the operating system (par. [0095]; par. [0096]; par. [0098]);

determining whether a schedule request for one of the processes to be executed under control of the operating system has been made to the operating system(Fig. 1; fig. 9; Par. [0070]); and

determining whether an interruption request has been made to the operating system based on an interruption request flag set when an interruption to the operating system is required (fig. 6, 174; fig. 12, elements 241,242; par. [0105], lines 14-19).

15. As per claim 6, Saito teach the determining whether the schedule request has been made to the operating system is based on a schedule request flag stored in a process control block of the one of the processes to be executed under control of the operating system (par. [0070]).

16. As per claim 8, Saito teaches the primary priority of the task is changed to the higher priority after it is determined at the determining that the non idle process waiting for the execution is included in the process to be executed under control of the operating system (par. [0085]- Par. [0095].

17. Saito doesn't explicitly teach that a priority change when a predetermined period of time has elapsed. However, it would have been obvious from Saito background of invention of allocating time slice for each virtual machine to incorporate this teaching with changing operating system priority to have a fair share of the CPU time (par. [0003]).

18. As per claim 9, Saito teaches a task control apparatus comprising:

a storage device storing computer-readable instructions, execution of the instructions by the task control apparatus facilitates causing a computer to execute an operating system as a task, execution of the instructions configuring the task control apparatus to include a process control block (PCB) that stores a process identifier; a determining unit that determines whether the process is the non-idle process or not and the non-idle process is executable under control of the operating system based on the process identifier stored in the process control block (PCB) of processes to be executed under control of the operating system, wherein the non-idle process is a process waiting for execution as the task under control of the operating system, other than an idle process executed when the operating system proceeds to an idle state (fig. 2, 101; par. [0070]; par. [0071]; par. [0094]; par. [0095]; par. [0096]; par. [0098]; Fig. 5, 114); and

a changing unit that changes a priority of the task to a priority higher than a primary priority of the operating system task by reading the priority higher than the primary priority stored in a storage unit as a system parameter and setting the priority of the task to the priority higher than the primary priority when it is determined that the processes to be executed under control of the operating system include the non-idle process (Abs.; par. [0020]; par. [0086]; par. [0091]; par. [0093]; par. [0094]; par. [0096]; lines 11-18).

19. Saito does not explicitly teach that the process identifier indicates whether a process is the non-idle process or not. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to conclude from Saito teaching, of checking for executable task (non-idle process) in the executable task queue to be executed, that task ids existence in the executable task queue (fig. 5, 160" c, d, f"; par. [0086]- Par. [0095]) indicated

whether the process is non- idle process or not as claimed. In other words, if the process ID exists in the queue, it is a non idle process since it is in the executable task queue.

20. As per claim 10, it is the task control method of the medium claim 1. Therefore, it is rejected under the same rational.

21. As per claim 11, Saito teaches changing the priority of the task to the primary priority lower than the higher priority by reading the primary priority stored in the storage unit as a system parameter and setting the priority of the task to the primary priority after the operating system has been executed at the higher priority (par. [0020]; par. [0061]; par. [0085]- Par. [0095]; par. [0111]; par. [0112]; par. [0113]; par. [0115], lines 5-8; wherein after the higher task execute, it is implied that the scheduler will schedule the preempted task with the primary priority which is next on the queue list since the queue is ordered in descending order of priority).

22. Saito doesn't explicitly teach operating system execution for a predetermined period of time. However, it would have been obvious from Saito background of invention of allocating time slice for each virtual machine to incorporate this teaching with changing operating system priority to have a fair share of the CPU time (par. [0003]).

Response to Arguments

23. Applicant's arguments filed on 08/24/2009 have been fully considered but they are not persuasive.

24. In the remarks, applicant argues the following:

a. Saito fails to teach "a changing unit that changes a priority of the task to a priority higher than a primary priority of the task by reading the priority higher than the primary priority stored in a storage unit as a system parameter and setting the priority of the task to the priority higher than the primary priority when it is determined that the processes to be executed under control of the operating system include the non-idle process"

28. The examiner respectfully disagrees with the applicant in the following:

a. Saito teaches a reschedule that upon a higher priority task that the currently executing task becomes available (non idle process). The rescheduler halts or resumes of the currently executing task and execute the higher priority task which is done by checking the task management tables for the priority of the tasks (par. [0071]; par. [0085]-par. [0095]) which is changing a priority of the task to a priority higher than a primary priority of the task by reading the priority higher than the primary priority stored in a storage unit as a system parameter and setting the priority of the task to the priority higher than the primary priority when it is determined that the processes to be executed under control of the operating system include the non-idle process as claimed.

Conclusion

29. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

30. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAROLINE ARCOS whose telephone number is (571)270-3151. The examiner can normally be reached on Monday-Thursday 7:00 AM to 5:30 PM.

32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

33. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/
Supervisory Patent Examiner, Art Unit 2195

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Examiner, Art Unit 2195